What is claimed is:

1. A method for manufacturing a piston for a swash plate type compressor with variable capacity comprising: the step of

(A) forming the first piston member(23) having a bridge(21) and the first coupling part(22) extending from the bridge(21);

(B) forming the second piston member(26) having the second coupling part(24) coupled with the first coupling part(22) and the hollow part(25) formed by coupling the first piston member(23) and the second piston member(26) with each other;

(C) rotatably supporting the first and second piston members(23 and 26) to the first and second supporting parts(31a and 31b) after coupling the first and second piston members(23 and 26) temporarily;

(D) friction stir welding using friction heat generated by friction contact while the first support part(31a) is rotated at predetermined speed after a welding means(40) is rotatably advanced downwardly and inserted to a welding portion of the first and second piston members;

(E) moving the welding means(40) inserted to the welded portion to the predetermined position after finishing the friction stir welding of the welding portion; and

(F) separating the welding means(40) from the welded portion.

2. A method for manufacturing a piston for a swash plate type compressor with variable capacity comprising: the step of

(A) forming the first piston member(23) having a bridge(21) and the first coupling part(22) extending from the bridge(21);

(B) forming the second piston member(23) having the second coupling part(24) coupled with the first coupling part(22) and the hollow part(25) formed by coupling the first piston member(23) and the second piston member(26) with each other;

(C) position controlling of the central axis line of the first and second piston members(23 and 26) to that of the first and second supporting parts(31a and 31b) after temporarily coupling the first and second piston members(23 and 26) and supporting the first and second piston members(23 and 26) on the support rollers(33) installed elastically by a elastic spring;

(D) supporting the first and second piston members(23 and 26) to the first and second supporting parts(31a and 31b) after the position controlling step;

(E) friction stir welding using friction heat generated by friction contact while the first support part(31a) is rotated at predetermined speed after a welding means(40) is rotatably advanced downwardly and inserted to a welding portion of the first and second piston members;

(F) moving the welding means(40) inserted to the welded portion to the predetermined position after finishing the friction stir welding of the welding portion; and

(G) separating the welding means(40) from the welded portion.

3. A method for manufacturing a piston according to claim 1, wherein the friction stir welding is done by one-time rotation of the first and second piston members(23 and 26) using the first supporting part(31b).

4. A method for manufacturing a piston according to claim 2, wherein the friction stir welding is done by one-time rotation of the first and second piston members(23 and 26) using the first supporting part(31b).

5. A method for manufacturing a piston according to claim 1, wherein the moving of the welding means(40) is carried out by moving a table(36) within the predetermined distance in the axial direction of the piston(20).

6. A method for manufacturing a piston according to claim 2, wherein the moving of the welding means(40) is carried out by

moving a table(36) within the predetermined distance in the axial direction of the piston(20).

7. A method for manufacturing a piston according to claim 1, wherein the welding means(40) is moved to the bridge(21) portion of the first piston member(23) from the welded portion(29) by the movement of the table(36).

8. A method for manufacturing a piston according to claim 2, wherein the welding means(40) is moved to the bridge(21) portion of the first piston member(23) from the welded portion(29) by the movement of the table(36).

9. A method for manufacturing a piston according to claim 2, wherein support rollers(33) are lifted or lowered by ascent and descent member(53) which is connected to the lower side of supporting member(34) supporting the both support rollers(33) and elastically supported by the elastic spring(52).

10. A method for manufacturing a piston according to claim 2, wherein the position controlling of the central axis line of the first and second piston members(23 and 26) to that of the first and second supporting parts(31a and 31b) is done in a state which the upper surface of the second piston member(26)

elastically supported by the support rollers(33) is pressurized by a position controlling guide member(60) installed upper side of the second supporting part(31b).

11. A method for manufacturing a piston according to claim 2, after the supporting step of the first and second piston members(23 and 26), further comprising a step of fixing the ascent and descent member(53) by moving the fixing means(70) driven by driving means(77) to the lower side of the ascent and descent member(53) and having the upper surface of the fixing means (70)contacted with the lower side of the ascent and descent member(53) to fix the lower portion of the ascent and descent member(53) which is elastically installed by elastic spring(52) under the support rollers(33).